## REMARKS

The present Amendment amends claims 1-9 and cancels claims 10-19.

Therefore, the present application has pending claims 1-9.

### Interview Summary

Applicants thank the Examiner for granting the interview conducted on January 16, 2007. In the interview, the Examiner confirmed that the patent number cited in the Office Action for the Akiyama, et al. ("Akiyama") reference was a typographical error. The Examiner intended to cite U.S. Patent No. 5,379,344 to Akiyama instead of U.S. Patent No. 6,018,717.

### Specification

The Examiner objected to the specification citing informalities. More specifically, the Examiner indicated that the disclosure contains hand written editing words and phrases throughout, and that no line numbers or paragraph numbers are provided in the disclosure. In view of these objections, the Examiner indicated that a substitute specification including is required.

This rejection is traversed for the following reasons. On June 25, 2003, Applicants submitted three versions of the specification. One version was the original specification (61 pages). Two additional versions, a marked-up copy of the specification (61 pages) and a substitute specification (49 pages), were filed with a Preliminary Amendment. It appears that the Examiner has considered the marked-up version of the specification filed on June 25, 2003, whereas the Examiner should have considered the substitute specification. Accordingly, Applicants respectfully request that the Examiner acknowledges receipt of the substitute specification, and submit that this objection should be withdrawn.

The Examiner objected to the title of the invention as being non-descriptive. Applicants have amended the title of the invention to overcome this objection. Therefore, this objection should be withdrawn.

## 35 U.S.C. §112 Rejections

Claims 1-9 stand rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. This rejection is traversed for the following reasons. Applicants submit that claims 1-9, as now more clearly recited, are in compliance with the provisions of 35 U.S.C. §112.

## 35 U.S.C. §103 Rejections

Claims 1, 3, 5 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,779,113 to Guthery in view of U.S. Patent No. 5,539,825 to Akiyama, et al. ("Akiyama"). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claims 1-9, are not taught or suggested by Guthery or Akiyama, whether taken individually or in combination with each other in the manner suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to a smart card as recited, for example, in independent claims 1, 3, 5 and 8.

The present invention, as recited in claim 1, and as similarly recited in claims 3, 5 and 8, provides a smart card, which includes a communication unit that communicates with the outside, an information accumulating unit to accumulate data

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and a program, and an arithmetic processing unit to perform information processing. According to the present invention, the information accumulating unit stores value data, a transfer key that updates the value data, a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key identifier that can be stored by the smart card. Also according to the present invention, the arithmetic processing unit updates the transfer key identifier and the transfer key by performing encryption using the update key on the basis of common-key cryptography. Furthermore, according to the present invention, the arithmetic processing unit updates the value data by performing encryption using the transfer key on the basis of the common-key cryptography. The prior art does not teach or suggest all of these features.

The above described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record. Specifically, the features are not taught or suggested by either Guthery or Akiyama, whether taken individually or in combination with each other.

Guthery teaches an integrated circuit card having situation dependent identity authentication. However, there is no teaching or suggestion in Guthery of the smart card as recited in claims 1, 3, 5 and 8 of the present invention.

Guthery discloses an integrated circuit (IC) device, such as smart cards, electronic wallets, PC cards, and the like, and various methods, for authenticating identities and authorizing transactions based on the authenticated identities in a situation-dependent manner. The IC device has a memory and a processor, and maintains an identity authentication table in the memory to hold an arbitrary number

of identities. The identity authentication table correlates identities with authentication

protocols, so that different protocols can be used to authenticate associated

identities. The identity authentication table also correlates counts with the identities.

Individual counts specify a number of uses of the IC device for a corresponding

identity without requiring the IC device to authenticate the identity for each use. The

IC device also maintains an authentication vector in memory. The authentication

vector tracks identities in the identity authentication table that are currently

authenticated by the IC device. The IC device also maintains one or more masks

that can be used to modify the authentication vector in a situation-dependent

manner. The IC device further maintains authorization tables in the memory and in

association with particular files used in transactions. Each authorization table

defines authorization for a particular transaction as a Boolean expression of the

identities listed in the identity authentication table.

One feature of the present invention, as recited in claim 1, and as similarly

recited in claims 3, 5 and 8, includes where the information accumulating unit stores

value data, a transfer key that updates the value data, a transfer key identifier that

judges whether the transfer key is newer or older in accordance with a value of the

transfer key identifier, an update key that updates the transfer key, and an upper

limit of the transfer key identifier that represents an upper limit of the transfer key

identifier that can be stored by the smart card. Guthery does not disclose this

feature. To support the assertion that Guthery teaches this feature, the Examiner

cites: column 5, lines 27-42; column 6, lines 60-67; column 7, lines 1-5; and column

12, lines 1-25. However, neither the cited text nor any other portion of Guthery

teach or suggest the claimed features. For example, Guthery does not teach or

suggest a transfer key identifier that judges whether the transfer key is newer or

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older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key that can be stored by the smart card.

As described in column 5, lines 27-42, Guthery discloses a multi-purpose smart card or IC card that contains various resources that might be used by, or in support of, an application executing on a point-of-transaction unit. Among these resources includes cryptographic functions and electronic assets, which represent value, such as electronic entertainment tickets, travel reservations, and service contracts. This is not the same as a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key that can be stored by the smart card.

As described in column 6, lines 60-67 to column 7, lines 1-5, Guthery discloses where a ROM stores a cryptographic program that performs certain cryptographic functions, including encryption, decryption, signing, and verification. This is not the same as a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key that can be stored by the smart card.

As described in column 12, lines 1-25, Guthery describes a scenario where a cardholder wishes to move loyalty points from one loyalty point purse to another at an exchange rate that is agreed to by the owners of the two purses. This scenario envisions embedding the purse owners' authentication keys in an executable program, and when the program executes, it can authenticate both purse owners

using these keys, do the transfer using the read and write privileges of the purse owners, and then authenticate the purse owners before it terminates. This is not the same as a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key that can be stored by the smart card.

Therefore, Guthery fails to teach or suggest "wherein said information accumulating unit stores value data, a transfer key that updates the value data, a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key identifier that can be stored by the smart card" as recited in claim 1, and as similarly recited in claims 3, 5 and 8.

The above noted deficiencies of Guthery are not supplied by any of the other references of record, namely Akiyama, whether taken individually or in combination with each other. Therefore, combining the teachings of Guthery and Akiyama in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Akiyama teaches an electronic cashless transaction system. However, there is no teaching or suggestion in Akiyama of the smart card as recited in claims 1, 3, 5 and 8 of the present invention.

Akiyama discloses a key control method for use in an electronic cashless transaction system including at least a bank center, a store transaction terminal and an IC card, which is used as an electronic cashless transaction medium. The key control method includes a step of having the bank center generate and code a first

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parameter for a transmission to the IC card, and a step of having the IC card receive and decode the coded first parameter by using the first key, thereby reconstructing the first parameter issued by the bank center, perform a first operation on the first parameter and a password of a holder of the IC card, and store in a first register. The key control method also includes a step of having the store transaction terminal send to the IC card a second parameter coded by a second key, when the holder inserts the IC card into the store transaction terminal, a step of having the IC card decode the coded second parameter by using the second key, thereby reconstructing the second parameter received from the store transaction terminal, perform a second operation on the second parameter and the value stored in the first register, store a result of the second operation in the second register, and a step of decoding a value stored in the second register by using a coding session key stored in a memory of the IC card, thereby obtaining a key for an intended authentication.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 3, 5 and 8, includes where the information accumulating unit stores value data, a transfer key that updates the value data, a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key identifier that can be stored by the smart card. Akiyama does not disclose this feature. As best as can be determined, it appears that the Examiner merely relies upon Akiyama for teaching the update of the value data. Without regard to the update of the value data feature, Applicants submit that Akiyama fails to teach or suggest the claimed features previously discussed as being deficient in Guthery.

For example, Akiyama does not teach or suggest a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key that can be stored by the smart card, and the Examiner does not rely upon Akiyama for teaching this feature.

Therefore, Akiyama fails to teach or suggest "wherein said information accumulating unit stores value data, a transfer key that updates the value data, a transfer key identifier that judges whether the transfer key is newer or older in accordance with a value of the transfer key identifier, an update key that updates the transfer key, and an upper limit of the transfer key identifier that represents an upper limit of the transfer key identifier that can be stored by the smart card" as recited in claim 1, and as similarly recited in claims 3, 5 and 8.

Both Guthery and Akiyama suffer from the same deficiencies, relative to the features of the present invention, as recited in the claims. Therefore, combining the teachings of Guthery and Akiyama in the manner suggested by the Examiner does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 3, 5 and 8 as being unpatentable over Guthery in view of Akiyama are respectfully requested.

Claims 2, 4, 6, 7 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Guthery in view of Akiyama, and further in view of U.S. Patent No. 6,230,267 to Richards, et al. ("Richards"). Claim 2 is dependent on claim 1, claim 4 is dependent on claim 3, claims 6 and 7 are dependent on claim 5, and claim 9 is

dependent on claim 8. Therefore, Applicants submit that dependent claims 2, 4, 6, 7, and 9 are allowable for at least the same reasons discussed above regarding independent claims 1, 3, 5 and 8.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1-9.

In view of the foregoing amendments and remarks, Applicants submit that claims 1-9 are in condition for allowance. Accordingly, early allowance of claims 1-9 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (referencing Attorney Docket No. 501.42780X00).

Respectfully submitted,

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